Total No. of printed pages = 3

Et-507/EI/5th Sem/2014/N

ELECTRONIC INSTRUMENTATION

(Elective)

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer any *five* questions.

1. What is an LVDT ? Where is it used ? Explain the operating principle of an LVDT. What is the impact of linearity and sensitivity on LVDT ? 14

2. (a) What is tachometer ? Explain AC and DC tachometer with the help of suitable diagram. 9

   (b) Explain the basic principle of moving magnet type velocity transducer. 5

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3. (a) With the aid of a neat sketch, explain the working principle of thermocouple. 10

(b) State the advantages and limitations of thermocouple. 4

4. (a) With the help of a neat sketch, explain the working of turbomagnetic flowmeter. 9

(b) Explain in brief the working principle of piezoelectric type accelerometer. 5

5. Explain the operation of radiation pyrometer and optical pyrometer with suitable diagram. 14

6. (a) Explain in brief the needs for the signal conditioning equipment. 4

(b) What do you understand by instrumentation amplifier ? Explain with neat sketch. How does instrumentation amplifiers differ from the ordinary Opamp ? 10

7. Write short notes on any *two* : 7×2=14

(a) Pirani gauge

(b) Drag-cup tachometer

(c) Resistance thermometer

(d) DC and AC signal conditioning system

(e) Ultrasonic flowmeter

(f) Piezoelectric transducer.